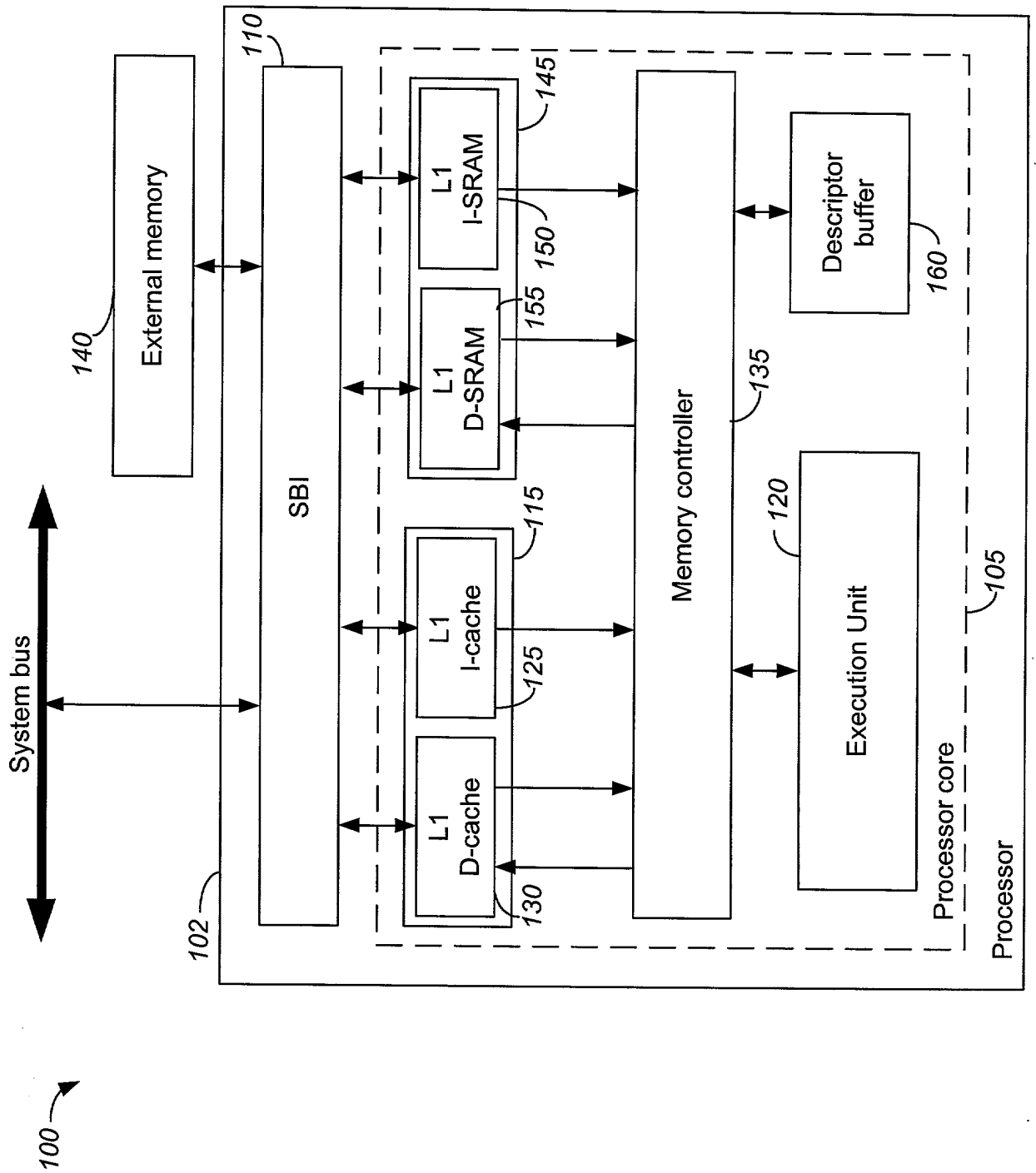
100
System bus
External memory
140
SBI
102
Processor
110
Processor core
105
L1
D-cache
130
L1
I-cache
125
115
L1
D-SRAM
155
L1
I-SRAM
150
145
Memory controller
135
Execution Unit
120
Descriptor
buffer
160

FIG. 1

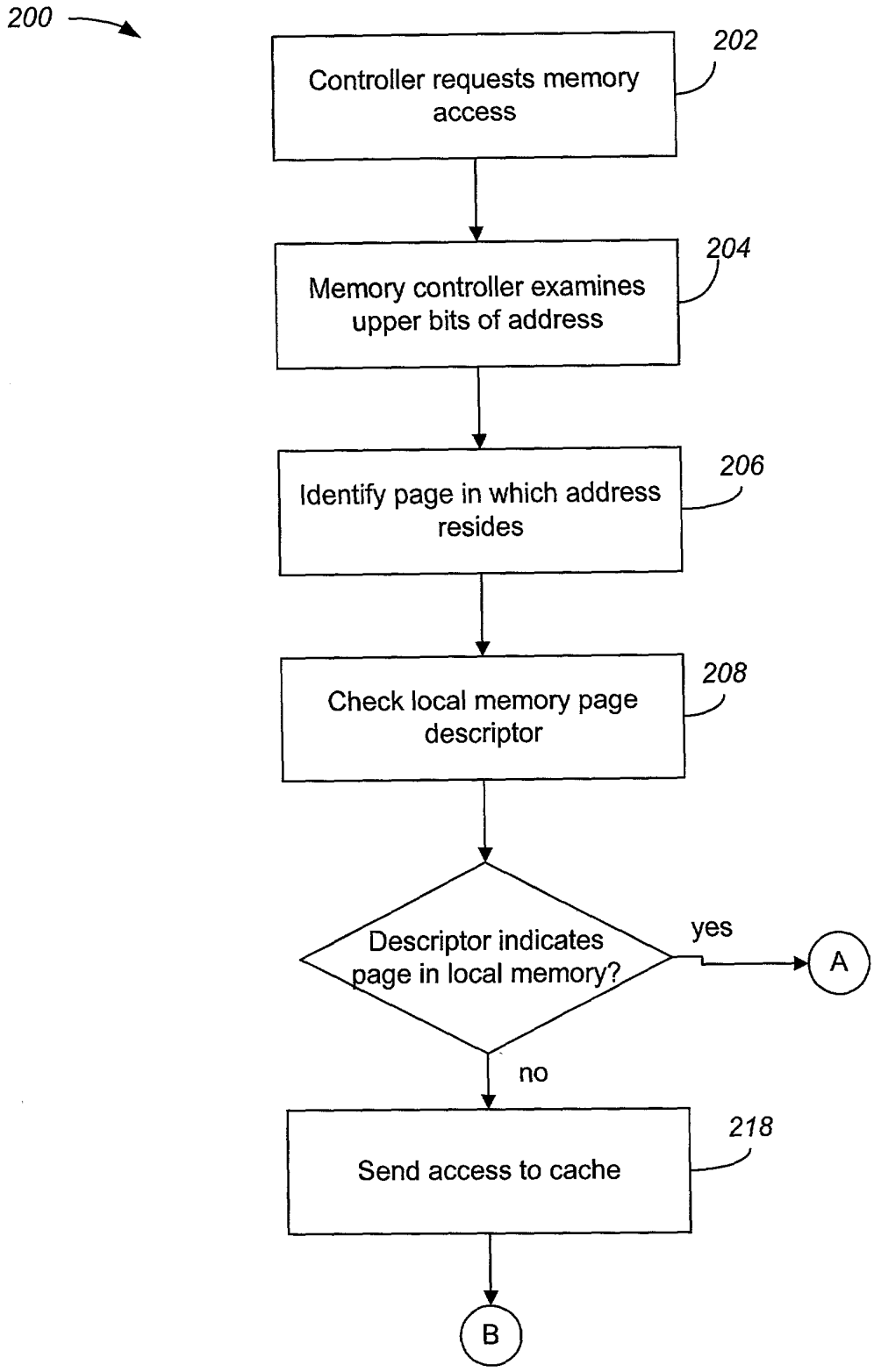
200
Controller requests memory access
202
Memory controller examines upper bits of address
204
Identify page in which address resides
206
Check local memory page descriptor
208
Descriptor indicates page in local memory?
yes
A
no
Send access to cache
218
B

FIG. 2A

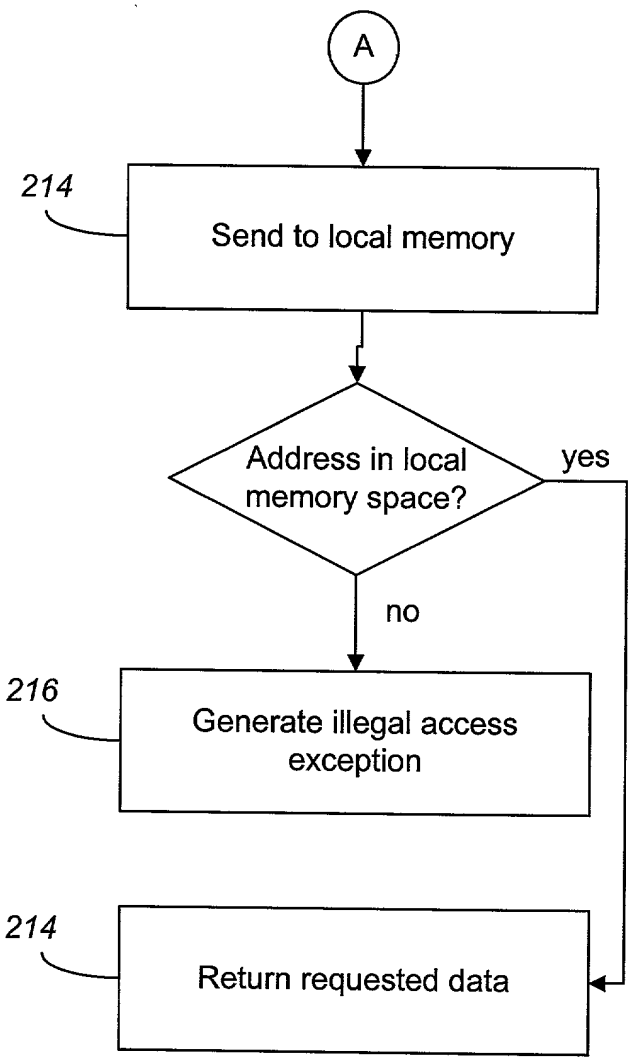
A
214
Send to local memory
Address in local memory space?
yes
no
216
Generate illegal access exception
214
Return requested data

FIG. 2B

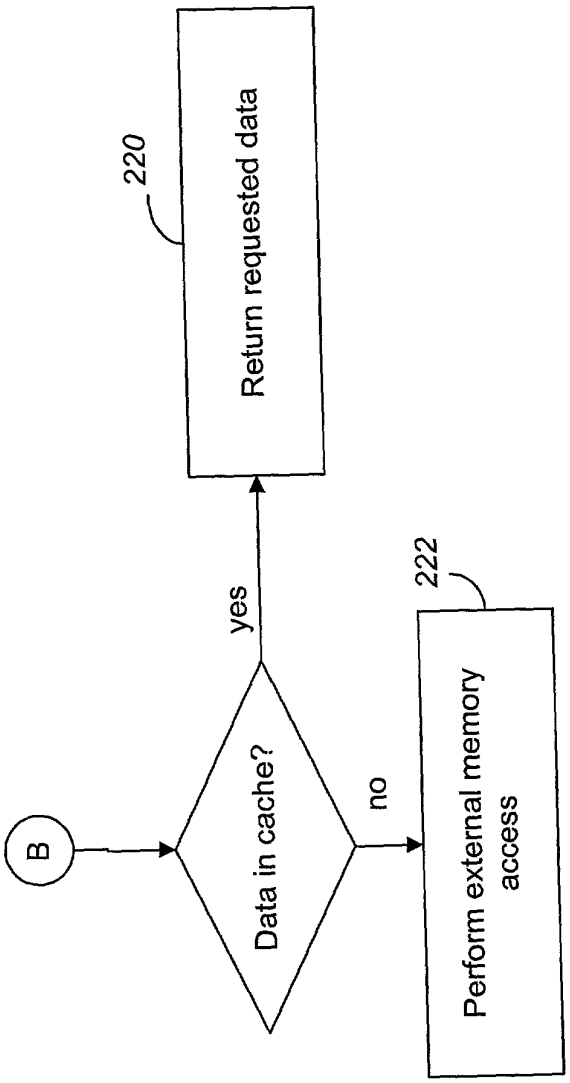
B
Data in cache?
yes
no
220
Return requested data
222
Perform external memory access

FIG. 2C

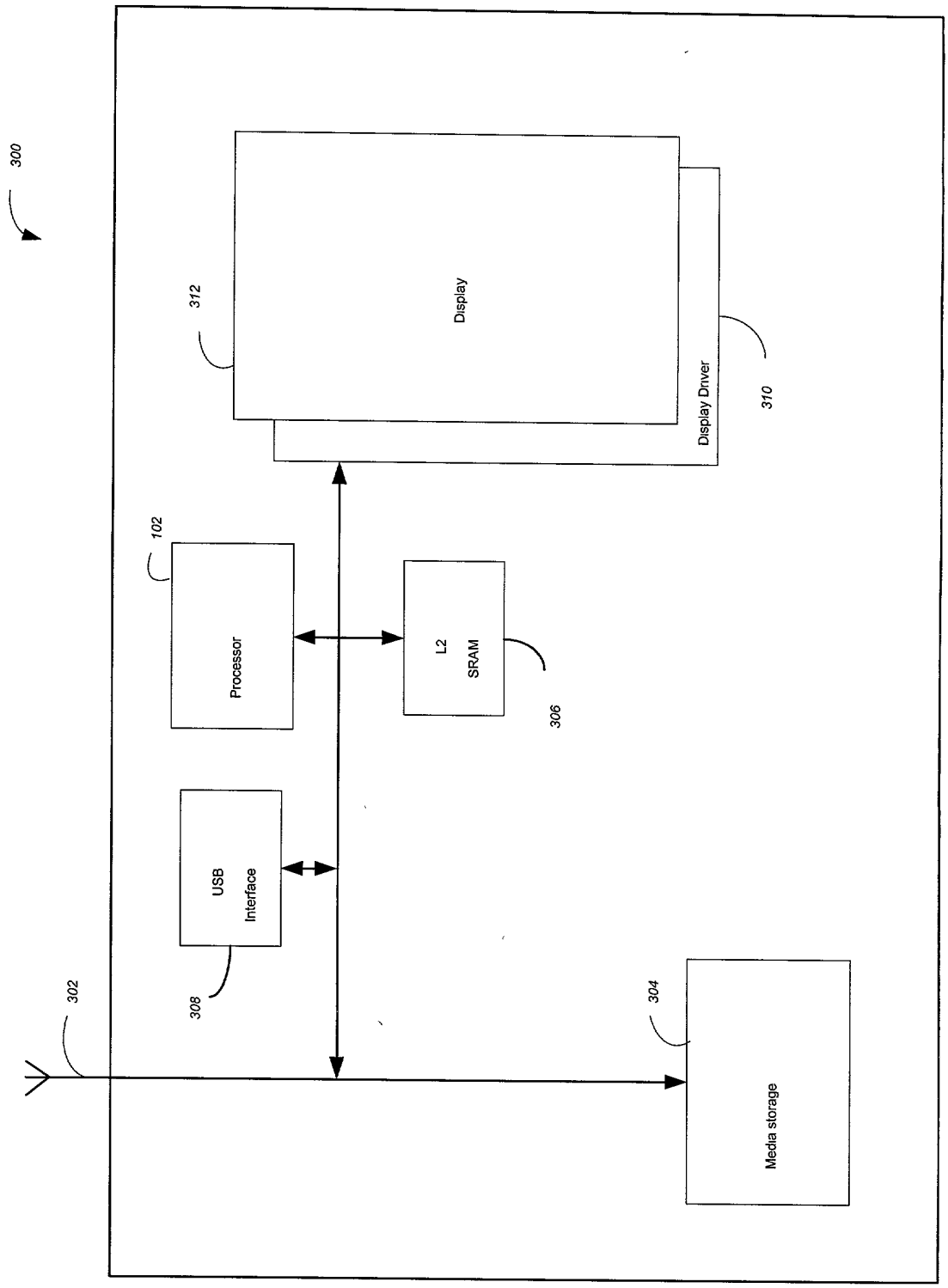
300
312
Display
Display Driver
310
102
Processor
L2
SRAM
306
USB
Interface
308
302
304
Media storage

FIG. 3